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ABSTRACT

Competence is one of the outcomes of learning. Competence embraces both specific task skills and the understanding, knowledge, attitude, and personal skills required to carry out that task effectively. An education and training system built on a broad definition of competence would give greater control to the users of the system (the individuals and the employers); and less to the deliverers (teachers, trainers, institutions, and awarding and accrediting bodies). Such a system is likely to serve the interests of learners better but could meet resistance from a variety of sources. Although the National Council for Vocational Qualifications of Great Britain has been set up to develop a national, competence-based framework specifically for vocational qualifications, the ideas are likely to have a significant influence on nonvocational and higher education. The methodology of functional analysis to define competence in vocational areas is broader than traditional approaches to skill assessment; however, it does not address such questions as personal effectiveness, transferability, and potential. There are alternative approaches to building competence models, such as those based on the techniques of job competence assessment developed in the United States and explored in educational contexts in Britain by the Unit for the Development of Adult Continuing Education (UDACE). (CML)

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Understanding Competence

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UDACE Staff

Stephen McNair	Head of Unit
Sue Otter	Development Officer
Jackie Riley	Support Staff

UNDERSTANDING COMPETENCE

A Development Paper

Unit for the Development of Adult
Continuing Education

This paper is the first publication by UDACE on issues of competence and learning outcomes. The Unit intends to do further work in this field aimed at developing positive and broad approaches to questions of learning outcomes and competence in both vocational and non-vocational areas. The Unit would be interested to hear from agencies or individuals interested in collaborating in such work.

A UDACE Development Paper

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Introduction

In recent years there has been increasing interest in the idea of competence in education and training. The notion is already making a major impact on vocational education and is likely, in time, to change the shape of all post-school education and training in Britain. However, there are a number of real anxieties about the implications of these ideas, about how they are being developed and about the impact they will have on adult learners.

At the centre of these debates is the question of the role of economic needs and vocationalism in education. This has been sharply focussed by the establishment of the National Council for Vocational Qualifications (NCVQ) and and by the development by NCVQ and the Training Agency of a competence-led framework of vocational qualifications.

This paper explores some of these issues, examining the notion of competence and its particular interpretation by NCVQ and the Training Agency and raises some questions about the implications for adult learners.

The paper is divided into four broad sections:

- the first briefly sets the context;
- the second looks at what competence means;
- the third looks at the recent development of the notion of competence and focuses in particular on the approach to occupational competence favoured by NCVQ and the Training Agency;
- the fourth looks at the implications, for adult learners and educators, of an education and training system based on competence.

Summary

The paper suggests that the development of an education and training system which gives more attention to the outcomes of learning is in the interests of adult learners and that the intentions of the NCVQ development are therefore to be welcomed in principle. However, there are powerful reasons why institutions and agencies would wish to resist such a development, which carries with it the risk of narrowing to a model which would not serve those learners (or the economy) well. There are also issues which the NVCQ model does not address, and techniques for defining competence and other learning outcomes in terms of what effective performers do, rather than the functions which they play in an organisation, needs further exploration.

The paper argues that:

- when adults choose to engage in learning, whether formal or informal, they do so to achieve some kind of change in themselves, their lives or circumstances. These 'outcomes' of learning are often complex and difficult to describe and measure, but are the central purpose of all education and training. Competence is one of these outcomes;
- an education and training system built on a broad definition of competence would give greater control to the users of the system – the individuals and the employers – and less to the deliverers – teachers and trainers, institutions and awarding and accrediting bodies;
- such a system is likely to serve the interests of learners better but could meet resistance from a variety of sources which may wish to marginalise the development of competence-based systems or to narrow definitions of competence;
- although the National Council for Vocational Qualifications has been set up to develop a national, competence-based framework specifically for vocational qualifications, the ideas are likely to have a significant influence on 'non-vocational' and higher education;

- competence is an outcome which is primarily concerned with doing, but which embraces both specific task skills and the understanding, knowledge, attitude and personal skills required to carry out that task effectively;
- the methodology of 'functional analysis' which the Training Agency has been developing to define competence in vocational areas is broader than traditional approaches to skill assessment. However, it still does not address some of the key issues which are central to vocational performance and to the broader aims of education and training, notably questions of personal effectiveness, transferability and potential;
- some of these issues are being addressed with the creation by NCVQ of the Brinsdon Committee to consider the development of generic competences. At the same time the CBI's Vocational Education Task Force has drawn attention to the danger that the breadth and quality of NCVQ's work could be eroded by the high proportion of conditional accreditations granted by NCVQ (where existing qualifications have been adapted but do not yet meet the full NCVQ criteria);
- there are alternative approaches to building competence models which might be useful, but which have not been so thoroughly explored or promoted. One set of approaches is based on the techniques of 'job competence assessment', developed in the USA by McBer & Co., and explored in educational contexts in Britain by UDACE[1];
- these issues require broader and better informed debate, and alternative approaches to competence require further study;
- the potential value of an outcome-based approach to education and training extends beyond the purely vocational. The principles developed to address competence in this area could be usefully applied in non-vocational education as well. This will call for a much more extensive, and better informed, debate, especially in higher and 'non-vocational' education where the issues are not widely understood at present.

1 Otter, S. *Student Potential in Britain* (UDACE, 1989)

1 Background

Economic, social and demographic changes are leading to a generally recognised need to reform our structures of education and training. The need to develop a better educated, more flexible workforce, with education and training continuing throughout life, is increasingly understood, and has been given prominence in a range of Government policy proposals. In response, there have been a variety of changes in education and training, to produce a more diverse, flexible and responsive range of learning opportunities. Changes have included increasing modularisation; new approaches to assessment and accreditation; and the development of open learning and of credit transfer. In parallel with these is the radical restructuring of vocational education and training being undertaken through the National Council for Vocational Qualifications (NCVQ) and the Department of Employment's Training Agency.

Responses to change have led to the breaking down of lengthy courses into smaller units of learning and accreditation intended to deliver more clearly defined outcomes. This represents a move from the traditional view of education as a lengthy and unified process towards education as a set of free-standing 'bricks' from which individuals can build their own structures. The critical question is how far it is possible to break up complex taught processes into smaller learned components without losing overall coherence. The clear danger is that the smaller units will concentrate on narrow objectives which are easily designed, achieved and measured (skills) at the expense of broader objectives (knowledge and understanding).

The notion of competence is a key component of these changes, and has been a particular feature of recent developments in vocational education and training. It is part of a broader move away from structured courses, with an emphasis on the teaching process, to a series of free-standing units, with the emphasis on the learner and on the outcomes of learning. These ideas will be important in the reshaping of education and training in the next few years. Some offer great potential benefits to adult learners; others are more problematic.

NCVQ has a crucial role in systematising the whole complex range of vocational qualifications in the UK and is using the notion of competence as the basis for this work. Competence is becoming the basis of the vocational education and training system and the ideas behind it will inevitably have an impact on the rest of education and training. It is essential that the NCVQ approach is clearly understood and that its implications for adult learners are carefully examined.

2 Competence

2.1 What does competence mean?

The term 'competence' is understood and applied by different groups of people in different ways. Its long association with vocational training and with skill rather than understanding has tended both to restrict its wider use in education and to create suspicion among those with broad educational objectives, who fear that those objectives and values will be lost in a concern for easily measurable physical performance. It is clear, however, that current moves to relate education and training more closely to employment will require a broader application and understanding of competence. This is potentially a very positive development for adult learners.

Competence is concerned with what people can do rather than with what they know. This has several implications:

firstly if competence is concerned with doing then it must have a **context** (i.e. 'doing something'), since doing is not an abstract activity;

secondly competence is an **outcome**: it describes what someone can do. It does not describe the learning process which the individual has undergone. Competence is not the only outcome of learning, nor is it an invariable outcome of education and training;

thirdly in order to measure reliably someone's ability to do something, there must be clearly defined and widely accessible **standards** through which performance is measured and accredited;

fourthly competence is a measure of what someone can do **at a particular point in time**. Competence is not an indication that a person will continue to be competent or will become more competent. Equally, the absence of competence at a particular point in time does not mean that the competence in question cannot be developed later.

2.2 Competence and context

If competence is concerned with doing, then it must be related to a context or a subject: it must denote the ability to do **something**. This strong association with context is an essential ingredient in the development of competence in the work of the NCVQ. Competence here is clearly related to the workplace and is measured, as far as possible, by performance in the workplace.

The use of workplace performance as a context requires a careful process of standards setting, since workplace practices are not nationally standardised. A workplace standard for each industry is being defined through the work of Industry Lead Bodies or Lead Bodies (LIBs) made up of representatives from the relevant field of employment. These standards describe, using statements of competence and performance criteria, what it is that an individual must be able to do to receive a competence-based award.

There are potential dangers in the use of workplace-based standards. The most critical is that the context may be too narrowly defined and that some basic skills like numeracy and communication may be omitted. The approach taken to writing competence statements by the NCVQ/TA and the LIBs has therefore been deliberately broad and seeks to avoid mechanical listing of job tasks and skills. This is achieved by working from a job role, rather than from individual tasks, an approach which takes into account variation in the job as well as personal responsibility. It begins with the quality of the product or service provided, rather than the separate skills required to produce them. It makes a genuine attempt to develop the 'flexible and adaptable' workforce described by the two White Papers, the 'New Training Initiative' (1981), and 'Employment for the 1990s' (1988).

The context of competence outside vocational education has not been considered in such detail and is considerably less clear. Employability is neither the objective nor a relevant context for all areas of education and training, and it may not be appropriate or practical to apply the same concept of competence to higher education or to informal adult education. However, it may be useful to

apply some of the principles of competence development to these sectors and to examine alternatives.

2.3 Competence and outcomes

Competence is not the only outcome of learning. A detailed description of all the outcomes of a learning process might include competence but would probably also include knowledge over and above that required for competent practice, as well as a variety of personal skills. A number of agencies, notably SCOTVEC and BTEC, have used the term 'learning outcome' when describing units and modules of qualifications. The learning outcomes of the SCOTVEC units are clearly competences, in that they have detailed performance criteria and are assessed in the workplace. BTEC learning outcomes, on the other hand, are broader and less specific, and, although related to workplace performance, would not all be described as outcomes by SCOTVEC. There are also outcomes of learning which are competences but which are not described by either of these systems.

Similarly, **competence is not an invariable outcome** of education and training. However, if competence is to become the basis of certification in vocational education and training, then there will need to be changes in how things are learned and taught as well as in how they are assessed. Many of these changes have important implications for adults since they could lead to a more flexible, unit-based, system of vocational education and training.

Much education and training is developed and delivered through objectives set for the learner by the teacher. Objectives relate to the content and delivery of courses and classes and are what the teacher expects the learner to be able to do at the end of the course or class.

Outcomes are broader than objectives. They are a measure of what has been achieved, rather than what is expected, and may include curriculum-based outcomes as well as a range of social and personal outcomes. There is a 'hidden curriculum' in much adult education and training which is concerned with these social and personal outcomes and in many cases it is these outcomes which are perceived as

being of real value and which could be threatened by a narrow emphasis on occupational competence.

However, competence-based education and training could offer a more radical and potentially student-centred approach, recognising and accrediting what adults can do across a much broader field. For example, participation in a French conversation evening class may have a range of objectives and outcomes. These may include the development of linguistic skills and might result also in the award of a certificate attesting attainment in the French language. However, the certificate will not attest to outcomes concerned with improvement in written or verbal communication skills in English, or with the confidence to participate in group work, or the planning and organisation required to get the supper early, arrange a babysitter and transport. Measuring and recognising only those competences related to linguistic skills ignores a series of outcomes which may be valuable to the individual, to a potential employer and to the education manager seeking to use resources effectively to help learners acquire the skills which they need.

Competence is important because it recognises outcomes, but its restriction to workplace outcomes is potentially dangerous since it ignores other broad and valuable outcomes which are particularly relevant to adults. It is this danger which we need to guard against in future development.

2.4 Competence and standards

To certify competence requires some kind of standard against which the evidence of skills and understanding may be judged. Certification depends on a standard which guides the judgement of assessors, who decide whether an individual is competent or not competent. Standards may be set at various levels and may include or exclude a variety of areas of performance.

The actual standard required in many certificated courses at present is often far from clear, resting on the academic judgement of an examiner, and quite inaccessible to anyone else. These (non-explicit) standards may be based on a wide range of learning outcomes, and

often include such factors as communication skill, written presentation, personal organisation and motivation, as well as knowledge. Competence standards, on the other hand, are, for the learner, something real to aim for and, for the employer, a basis against which to judge expectations. Descriptions of course content or processes, on the other hand, are not standards, and learners and others may be unaware of the level of detail or understanding required to achieve certification.

Standards may be set at a threshold (pass/fail, competent/not competent); they may be used to grade individuals relative to one another; or to measure the progress of one individual. The critical thing about competence is that in order to measure and certify the ability to do something, a clearly defined standard must be written down. There are obvious benefits to adult learners in clear and public statements of outcomes and standards. They make it easier to choose wisely from the range of education and learning opportunities, and thus provide better 'customer information'. Further, adults bring a vast variety of previously acquired competences, and clear statements of standards make it possible for individuals, employers and teachers/trainers to measure these and have them accredited directly. In each case, waste of time for individuals and education providers is reduced.

The definition of standards required in employment has been a feature of the development of National Vocational Qualifications. The demonstration that standards can be clearly written and openly available may be a useful precedent for learners, teachers and trainers.

The development of the National Record of Vocational Achievement (NRoVA) is also based on competence statements. The NRoVA is a credit accumulation scheme, and it is intended to be a means of recording all vocational achievements, whether part of an NVQ or not. It can therefore be used to record units of competence achieved as the result of many different activities. NCVQ describes 'independent and self-directed study, correspondence courses, informal classes and courses which have not been assessed for certification purposes, e.g. in-company training, distance learning and adult

education, as well as experience in areas other than employment' (NCVQ Information Note 5). There is considerable potential in a credit accumulation system which can be based on achievements in many areas of work and experience and can lead to the award of national qualifications. Evidence of competence can also be used in more than one vocational context, and the process of credit accumulation helps individuals to move rapidly in a changing economy. Such a system could be very attractive to both adult learners and to providers of adult education.

2.5 Competence and potential

Competence is a measure of what a person can do at a particular time. It must inevitably be a measure taken at a particular point and may or may not indicate that an individual will continue to be competent in the future. There is an assumption in all qualifications that the individual has demonstrated a certain level of ability and will continue to do so. However, the clear link between competence and doing, rather than understanding or knowing, calls this assumption into question very sharply.

The ability to apply competence in other settings is a related issue. The notion of competence adopted by the NCVQ and the TA certainly implies the ability to transfer skills to new situations, and the assessment schemes associated with NVQs are intended to reflect this. However, the idea that some of the competences accredited by one qualification can be used later towards another is a fundamental principle of the NVQ development, and one which implies a radical shift in the nature of qualifications and related education and training. It is not yet clear how practicable such a transfer will prove to be.

The emphasis on 'doing' also raises the question of whether the performance of the 'competent' individual will develop and improve with time. There is an expectation in much education that personal and professional development will continue beyond the formal education process. The idea of the 'reflective practitioner' to which many educators are attached implies a level of understanding and of

personal commitment which may not be part of all understandings of competence.

There is considerable interest in the idea of capability, or potential, and in the extent to which competence is a reflection of the future performance of an individual. The notion of occupational competence does not address this issue. There are, however, approaches used in recruitment and personnel selection which examine issues of 'potential', and which may have something to offer in the development of a wider concept of competence. The 'Student Potential' project[1] examined such an approach and applied it to adults entering a variety of education and training programmes. It may be important to develop such approaches to supplement the 'snapshot' view of occupational competence currently in use.

1 Otter, S. *Student Potential in Britain* (UDACE, 1989) is available from the Publications Sales Department, NIACE, 19b De Montfort Street, Leicester LE1 7GE, £5.

3 A National Framework

3.1 The development of the idea

Competence is not a new concept in vocational education and training (VET). It has been the basis of developments in the UK and the USA over a number of years and has been a particular feature of teacher education, as well as of some medical and para-medical education. Competence to practise has been an underlying theme in these developments, and standards have been firmly controlled by professional and national bodies rather than directly by employers.

In the USA the competence movement was built on two simple principles: firstly that competence is based on the achievement of outcomes; and secondly that the outcomes are derived and defined in work-related terms. Despite this seemingly simple approach the competence and skills approach in the USA has not developed during the 1980s and has not exerted a major influence on professional and occupational licencing.

While initial development in the UK has been slower, the political commitment demonstrated by the setting up of NCVQ suggests that there may be more rapid and far-reaching changes in the next decade. Competence will be the basis of the national system of vocational qualifications and will have an impact both on vocational education and training and on other sectors of education. A clear understanding of the principles and practice of this system is therefore essential before a consideration of the implications of its introduction.

This section describes the role of the NCVQ and the Department of Employment Training Agency (TA) in the development of occupational competence and provides a working definition of competence. It then goes on to explain how statements of competence are defined by employers and how these are related to a national qualification structure and to awarding bodies.

3.2 The role of NCVQ

The creation of the National Council for Vocational Qualifications (NCVQ) and the development of National Vocational Qualifications have been a major force in developing ideas about the meaning of competence and about its application in vocational education and training.

NCVQ was set up in 1986 following the White Paper 'Working Together – Education and Training'. The Council does not itself offer qualifications, which will continue to be administered by awarding bodies like City and Guilds and BTEC. The role of NCVQ is to harmonise vocational qualifications by developing a simple framework which covers all vocational qualifications and clarifies the relationship between them. This framework is built on a series of units called competences. The unit nature of the framework allows the possibility of both credit accumulation and credit transfer. It also offers a range of different progression routes described as 'bridges and ladders'.

A key function of the NCVQ is to ensure that the competences are based on standards developed by industry and commerce and that the new national qualifications relate to these standards. In future all vocational qualifications will be made up of units of competence, which will describe clearly and publicly what has to be done to achieve certification. Units of competence will be clustered together to form NVQs or National Vocational Qualifications, which will continue to be administered by awarding bodies. All vocational qualifications will need to be written as a series of competence statements and will need to meet NCVQ approval criteria before being nationally recognised.

3.3 Occupational competence – setting standards

The setting of **national standards** for vocational qualifications is a key feature in the development of occupational competence and is likely to influence the delivery of education and training to achieve these competences. The TA has created a Standards Programme with three objectives:

- to get a better definition of what will be learned, which should be explicit and clearly understood by employers, learners and teachers;
- to set standards which are concerned with the outcomes of learning and which have a national currency through certification;
- to place the responsibility for defining and using standards in the hands of employers.

The development of the national standards programme, led by employers, has involved three things:

- the production of a clearly stated and widely acceptable definition of competence;
- the development of a simple method which can be used to derive competence statements in a reasonably standard form across a wide range of occupations;
- the creation and support of employer-led groups to create competence statements and set competence standards.

3.3.1 THE DEFINITION OF COMPETENCE

Definitions of competence abound in the literature and an early requirement of the standards programme was a broad and widely acceptable working definition of competence.

> *'Competence is a wide concept which embodies the ability to transfer skills and knowledge to new situations within the occupational area. It encompasses organisation and planning of work, innovation and coping with non-routine activities. It includes the qualities of personal effectiveness that are required in the workplace to deal with co-workers, managers and customers.'*
>
> (Technical Advisory Group, Guidance Notes. 1988 (2))

3.3.2 A SIMPLE METHODOLOGY - FUNCTIONAL ANALYSIS

Previous attempts to describe competences have often resulted in the production of lists of skills or tasks required in particular jobs. They have tended to separate competence into different areas:

- skill;
- knowledge and understanding;
- personal effectiveness.

This has led in turn to attempts to assess these areas separately. The experience of YTS demonstrated that providing training to achieve the competences often resulted in the **skills** being related to the context and assessed in the workplace. However, **knowledge, understanding** and **personal effectiveness** were less clearly related, and less effectively assessed. The result was that personal effectiveness was seen either as numeracy and literacy (and employers felt that trainees should have these already), or as 'soft skills' which were sometimes described as values like 'honesty, attitude and reliability'. Employers found it difficult to relate knowledge and personal effectiveness to context, and assessment proved to be subjective and problematic. The impression gained by the YTS trainee was that the readily observable and measurable skills were all that was really required. This strengthened the view that proficiency in the process was more important than the production of a quality outcome or product from the process. It was clear that the separation of competence into different areas, and in particular the treatment of personal effectiveness as a kind of skill which could be separately assessed, was not a useful way forward.

Those developing competence-based approaches to training in the TA and the NCVQ believed that the solution lay in a wholly different approach, described as **functional analysis**. This approach avoided the list of tasks and the separation of competence into separate components.

Functional analysis is concerned with the key purpose of the occupational role rather than with the process. It begins by examining the whole work role and looking for a key purpose. It then asks what has to happen, what do people have to do, for that purpose to be achieved. At this stage in the analysis, the work role need not

relate to an individual: it may relate to a company or a service or a professional function. The question of what has to happen for the key purpose to be achieved begins to divide the work role into a series of activities. Continuing this division eventually yields work roles which are carried out by individuals.

The following example, drawn from a development project on the competences of adult trainers (undertaken for the Training Agency by NIACE Cymru), illustrates the principles.

THE KEY WORK ROLES

1 Design programmes and determine resource needs for staff development for those with responsibility for adult education and training, to meet the agreed needs of organisations.

2 Plan, deliver and co-ordinate staff development programmes which meet the agreed needs of the organisations.

3 Review and report the outcomes of staff development programmes for adult educators and trainers and relate the outcomes to the agreed needs of the organisations.

WORK ROLE 3 – UNITS OF COMPETENCE

3.1 Evaluate training events and training programmes with reference to agreed training needs.

3.2 Report the outcomes of training events and programmes to the relevant organisations.

UNIT 3.1 – ELEMENTS

3.1.1 Review the input of those involved with the training against the training plan.

3.1.2 Review the cost of and the use of resources in training events against the training plan.

3.1.3 Review the feedback from the participants in training events.

3.1.4 Make arrangements to review and assess the performance of participants in training events with respect to the training needs of organisations.

3.1.5 Prepare and maintain evaluation records for each event.

3.1.6 Modify training events as a result of evaluation.

There are three important features of functional analysis:

- it examines **whole work roles** rather than simply a series of tasks or skills;
- it is concerned with the **outcomes of the role** rather than the processes and the inputs (the primary question is: 'is the product good?' not 'does the worker have particular skills?');
- it is a **'top down'** rather than a bottom up development (beginning with the functions of the organisation rather than the competences of individuals).

The outcome of functional analysis is a series of **competence statements or units.** These are the common denominator of the accreditation system, and they are the smallest part of the framework which can be separately accredited.

3.3.3 THE EMPLOYER ROLE

In order to implement the NCVQ framework, the TA has been given the role of convening and recognising employer groups, known as Lead Bodies (LIBs). These have been set up to achieve a consensus on national standards of competence. There are currently in the region of 130 LIBs, some of which are statutory or non-statutory training boards, while others are consortia of employers and professional and member associations.

The role of LIBs is to:

- oversee the definition of the competence-based standards;
- test the standards through consultation and application;
- promote their adoption in education and training.

Many of the LIBs include representatives from education and training as well as consultants able to provide expertise in functional analysis.

3.4 The national framework

The framework for National Vocational Qualifications is based on the unit of competence. Units are grouped together in relevant combinations to make up the NVQs. The framework initially offers NVQs at four levels, but the Government has now approved the extension of the framework (beyond Level 4) which takes it firmly into the domain of higher education and the professional bodies. The recent announcement by the Institute of Chartered Accountants for England and Wales of a project to define competence-based standards for newly qualified chartered accountants, and of their intention to revise their qualifications in the light of these standards, is an indication of the scope for development of the framework.

3.4.1 LEVELS

NCVQ itself describes the four levels in use currently as indicative rather than prescriptive[1] and provides the following guide:

Level 1 competence in the performance of a range of work activities which are primarily routine and predictable, **or** provide a broad foundation, primarily as a basis for progression;

Level 2 competence in a broader and more demanding range of work activities involving greater individual responsibility and autonomy than at Level 1;

Level 3 competence in skilled areas that involve performance of a broad range of work activities, including many that are complex and non-routine. In some areas, supervisory competence may be a requirement at this level;

Level 4 competence in the performance of complex, technical, specialised and professional work activities including those associated with design, planning and problem-solving, normally carrying a significant degree of personal accountability. In many areas competence in supervision or management will be a requirement at this level.

1 *Accreditation Procedures* (NCVQ, January 1988)

3.4.2 UNITS OF COMPETENCE

A unit of competence is the smallest unit which can be separately accredited. It relates to the work of a single person and must represent a coherent set of functions which make sense to employers and employees. A qualification is made up of a number of Units each of which has a title, and may have explanatory notes.

3.4.3 ELEMENTS

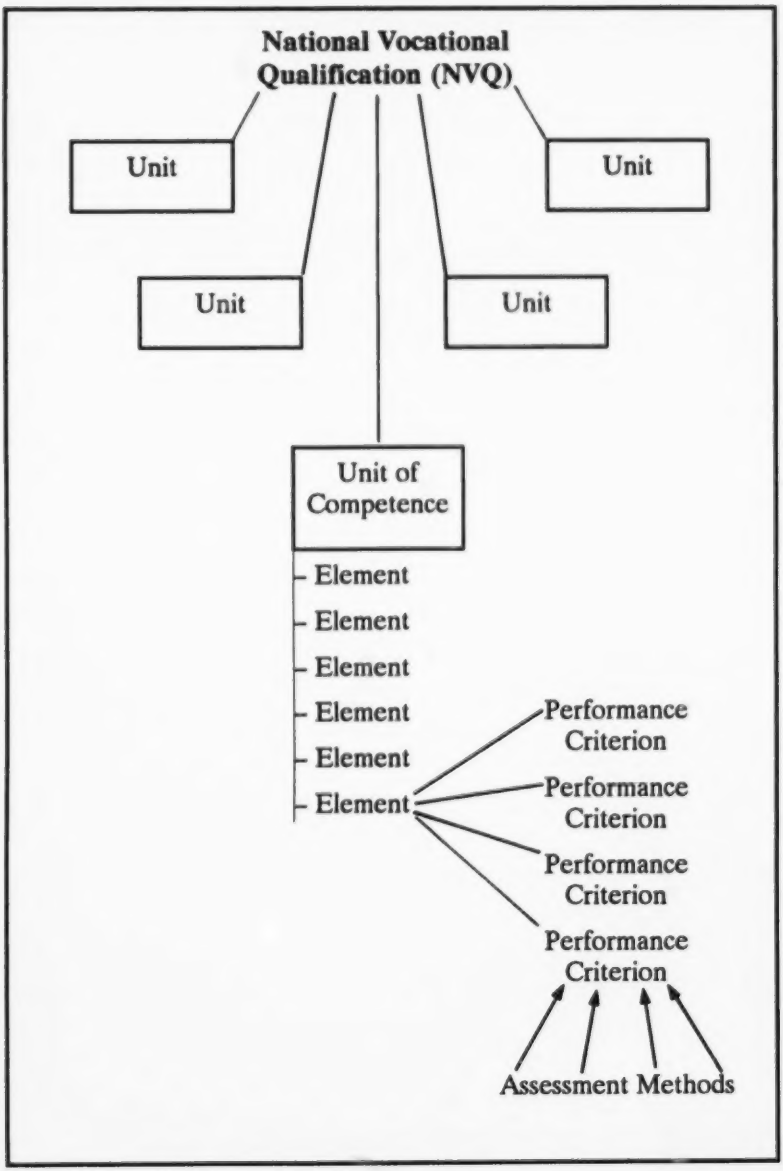
Each unit of competence is, in turn, made up of a series of **elements** which describe activities within the unit. There are usually between 5 and 10 elements within a unit and these are intended to cover the key aspects of competence, which are described as[1]:

- **technical or task skills**: specific skills and knowledge which enable an individual to deliver the key purpose or outcome of the role;
- **contingency management skills**: skills needed to manage the varied and sometimes unpredictable job role;
- **task management skills**: 'overarching' skills which integrate the technical and task components into the overall work role;
- **role, job or environment skills**: skills used to integrate the work role within the context of the wider organisational, market and social environment.

3.4.4 PERFORMANCE CRITERIA

Each element has an associated set of performance criteria, which are the statements of the areas or types of performance in the job which should be assessed. They are the statements used by an assessor to judge the evidence that an individual can perform the activity to an acceptable level.

1 TAG Guidance Note 2. *Developing Standards by Reference to Functions* (Training Agency, 1989)


National Vocational Qualification (NVQ)
Unit
Unit
Unit
Unit
Unit of Competence
Element
Element
Element
Element
Element
Element
Performance Criterion
Performance Criterion
Performance Criterion
Performance Criterion
Assessment Methods

3.4.5 ASSESSMENT

It can be seen that assessment of these cannot be a simple mechanical process, and performance may be assessed using evidence of various kinds. There are five recommended[1] methods of assessment:

- direct observation of work activities;
- skill/proficiency/competence testimony;
- projects and assignments;
- evidence from prior experience;
- questioning techniques.

The whole structure is shown in the diagram on the previous page.

3.4.6 AWARDING BODIES

In future all vocational awards will be required to fit into the NVQ framework. Awarding bodies like City and Guilds will continue to design and administer vocational qualifications but will be required to meet NCVQ approval criteria. This will mean that all qualifications will consist of combinations of competence units, with appropriate elements and performance criteria. A very small number of awards have been developed to date which have been accredited by NCVQ; other awards have been offered only conditional accreditation until they meet full approval criteria.

There are a number of areas in which nationally recognised vocational qualifications did not previously exist. New qualifications will be developed in these areas and it will be possible in future to include a whole range of certificates and diplomas offered by employers and other agencies in the framework.

1 TAG Guidance Note 5 *Assessment of Competence* (Training Agency, 1989)

4 Competence Based Education and Training – The Implications

The development of the national framework and work on competence is moving rapidly. Its effects will initially be greatest in the work-related further education sector as a result of the activity of NCVQ, but the impact is likely, in time, to be much wider, spreading to higher education and 'non-vocational' fields. Many of these changes have considerable potential benefit to adults in offering a means to create a more accessible and flexible range of learning opportunities across the full range of education and training.

However, there are major issues to be resolved and techniques to be developed. Some of these are identified here.

4.1 Access, flexible entry and exit

A qualification based on the award of units of competence need not depend on a course structure. Teaching for individual units could be available independently, and enrolment and admission could take place at any time, rather than being linked to term times. Clearer definitions of an entrant's competence and clearer definitions of the intended outcomes of a course can make the matching of learner and course more efficient for all parties. The move away from long, multi-purpose courses could allow learners to complete and leave units in the same flexible way. This will often be to the advantage of the learner but will pose real organisational problems for many institutions.

4.2 The balance of teaching and learning

Qualifications based on a series of small units can more easily be offered in a variety of different modes. This will allow the development of more distance and open learning opportunities, as well as permitting more flexible part-time learning geared to the pace of the learner. The new system can be much more learner-centred, but will need to help individuals to develop more conscious and effec-

tive learning skills. In the longer term this is more likely to produce independent, self-motivated learners than the current system with its emphasis on teaching processes, courses and institutional delivery. The need to demonstrate competence in the workplace will also lead to a more complex mix of work-based and college-based tuition.

4.3 Assessment

Units of competence will be accompanied by a series of explicit standards which will describe what has to be achieved for the award of a qualification. Assessment will be based largely on evidence of performance, and will, where practicable, use direct observation of performance in the workplace. These features of the new system are likely to radically alter the assessment systems currently in use in FE. The need to measure performance in the workplace will require the development of closer relationships between employers and colleges and is likely to result in an increasing number of assessors being based in the workplace. These could be college employees or college-trained employers' staff. The training of assessors could be a major development field for some educational institutions.

The development of competence statements and performance criteria offer the potential for the development of a wider range of assessment than is used currently. This, together with an increase in workplace assessment, is likely to lead to assessment becoming more widely available when required, rather than only at the end of courses. An increase in the numbers of people seeking accreditation of prior learning will also require that assessment is offered separately from learning or teaching. Assessment on demand could be a major development area for colleges. It offers many advantages for adult learners in opening access and enabling entry with 'advanced standing'.

4.4 Accreditation of prior learning

The explicit description of what is required for certification makes the assessment and accreditation of prior learning easier. In the current system the assessment of prior learning is restricted because

qualifications are often described in terms of curriculum content and processes rather than outcomes. This makes it difficult and time consuming to decide on level and equivalence of outcomes. A clear description of outcomes not only facilitates prior learning assessment, but also allows individuals a better opportunity to match their existing learning to qualifications and awards, and this is likely to be helpful in making informed choices about learning opportunities.

4.5 Progression

The NCVQ framework offers greater opportunity to progress from one vocational level to another. This will be facilitated by the NVQ credit transfer system, which allows units to be recorded separately in a Record of Achievement and accumulated towards the award of a full NVQ, or to whatever the individual learner requires. Some competence units will be common to several different NVQs, which will help to develop breadth, assist progression through the levels and increase individual ability.

The opportunity to acquire units gradually is an attractive feature for many learners, and especially for adults. The systematising of the whole vocational qualification area will also make it easier for learners to choose different routes and to develop routes which more closely fit their personal needs. Some people will prefer to assemble their own set of Units drawn from several areas and levels, without seeking a full qualification in any one. The extension of the NCVQ framework beyond Level 4 opens the possibility of developing better vocational (and perhaps other) routes into higher education and beyond.

4.6 Student support

The increasingly flexible system will require the development of better student support mechanisms. These will help learners to become more independent. Learner support will include guidance services, to help learners make better informed choices about routes and progression, and learning support services to help students develop varied and more conscious learning skills.

4.7 Planning and staff development

These wide-ranging changes will call for changes in the structures and processes of educational institutions. Student services, for example, will need to play a more central role in the organisation of institutions. New ways of undertaking and organising assessment will be needed. Staff development will be an essential means of supporting changing staff roles and maximising staff skills.

4.8 Public expectations

The adoption of the new structures for VET will change public expectations of education and training, and this will also affect those fields which do not have explicitly 'vocational' objectives. Learners are likely to come to expect clearer statements of intended outcomes, clearer standards and transferability of credit between sectors and institutions. All these are likely to benefit adult learners. It will be essential for those working in these fields to understand the vocational developments, and to find ways of describing those outcomes which they value highly (including those 'vocational' outcomes which 'non-vocational' education has always provided, but often not accredited or recognised) in terms which enable the systems to be harmonised.

The greater flexibility and participation rates suggested by the new VET system may well place similar expectations on higher education.

4.9 Entry to higher education

A move to a competence-based system of vocational education will have an impact throughout higher education. This will increasingly be the case at entry since there will be a potentially large group of people with competence-based qualifications seeking progression. BTEC and other non-A-level qualifications are already accepted in varying degrees as entry requirements by the HE sector, but the holders of the new vocational qualifications may have very different experience and expectations. This will raise questions about the equi-

valence between competence-based vocational certificates and the traditional A-level entry qualification, as well as components of existing degree and diploma courses.

4.10 Higher education curriculum

The polytechnic sector has traditionally had a close relationship with employment and employers which has resulted in the expansion of sandwich courses and the development of courses with particular commercial and industrial applications. There are similar changes in some university courses. The measurement of student performance in applied settings as well as in periods of industrial training and experience has sometimes been described as competence-based, but would not meet the criteria defined by NCVQ. The idea of competence has also been a feature of the assessment of work-based learning. Some HE institutions already validate courses and work experience gained in commerce and industry and offer diplomas and certificates as well as credits which may be accumulated towards the award of degrees and postgraduate qualifications. The CNAA CATS system has provided the basis of a credit system but, unlike NCVQ in the vocational sector, CNAA has an advisory rather than an approval/validation role in relation to those institutions within the scheme but not offering CNAA awards.

4.11 Accrediting work-based learning

An increasing number of employers and individual employees have sought to accredit both training and 'on the job' learning. The notion of competence could have an important role to play in helping to relate the learning acquired in employment with that within institutions. In particular the idea of stressing outcomes of learning rather than the content may be valuable. The approach to developing clear and explicit standards in association with employers could also be a valuable approach, but the principle of setting standards at a pass/fail threshold seems likely to find little favour. It is however feasible to look for ways of defining standards related to excellence or potential and to retain the principle of making those standards clear and explicit to teacher, learner and employer alike.

The advantage for adults, both in and out of employment, lies in extending the means of accrediting what they have learned in any setting. The notion of competence helps to provide a broader framework for this accreditation. It also offers several useful principles to an higher education system interested in widening access.

5 The Issues in Competence – Some Questions

The notion of competence may have valuable but unexplored applications in many sectors of education. The NCVQ approach, however, is well defined and moving rapidly to national implementation. This section considers what the occupational competence model has to offer other sectors of education and how approaches to a broader model of competence could be developed.

5.1 Generic competences

There have been many critics of the occupational competence model, particularly among providers of education and training who are concerned about a narrowly-based skills approach and about the emphasis on outcomes at the expense of content and process. The difficulties of the functional analysis approach to occupational competence have led to the setting up of an NCVQ Committee chaired by Gerald Brinsdon to look at the development of 'generic competences'. This is a response to the need to widen some NVQ Units, particularly at Level 1, and to include a broader range of skills. The work of the Brinsdon Committee may lead to the creation of generic units which describe competences common to many occupations and which become 'core units'. The danger in this approach is that generic units could become 'social and life skills' and could suffer the same problem of integration into the mainstream curriculum that arose in YTS.

Generic competences have been a source of some confusion in both the occupational competence movement in the UK and in skills/competence debates in the USA. There are undoubtedly some skills which are generic, and which will be common to a range of work and non-work situations. Communication and numeracy have been used as examples of such skills. A list of such skills was proposed by the Secretary of State for Education and Science in an address to the ACFHE conference in February 1989 ('FE : A New Strategy', HMSO, 1989), while a rather different one appears as

'Common Learning Outcomes' in the CBI's Vocational Task Force Interim Report (CBI, 1989). It seems sensible that skills of this kind should be included in education and training programmes, not only because employers define them as being an essential part of a job role (and sometimes suggest that they are the most important part) but because education and training serves social and personal functions as well as employment-related ones.

5.2. Alternatives to functional analysis

The occupational competence approach has been developed using functional analysis. This has limitations, particularly in relation to the breadth of outcomes which it includes. There are alternative approaches to the development of competence models, notably the job competence assessment approach developed by McBer & Co. in the USA and widely used in management development. The model is developed using people who perform effectively in a particular job role and by identifying the characteristics or competences of those people. This approach differs from functional analysis in that it offers a holistic view of the individual rather than a reductionist view of the components of the task.

Recent developments in management education and the work of the Management Charter group suggest that this approach to competence will be developed further. The recent report on the Assessment of Management Competence by the Ashridge Management Research group[1] suggests that the McBer type approach will 'probably form the basis of whatever new management education initiatives are developed in the future'.

The current work on management competence supported by the Training Agency may help to clarify the relationships between the two approaches.

1 *Assessing Management Competencies* Report of the Current Arrangements in the UK for the Assessment of Management Competencies. Ashridge Management Research Group 1989

5.3 Wider applications

Job competence assessment may be a useful approach to the development of competence models outside specifically vocational areas. It may also have a role in clarifying some of the wider outcomes of learning and could offer a basis for describing and assessing a broad range of outcomes. This approach could be very important for the adult learner because of its emphasis on the competence of the individual and on the identification of potential.

Functional analysis may have a wider role than the building of vocational competence models. It is a practical tool which enables employers and educators to talk more effectively about the intended and actual outcomes of education and training in a variety of contexts. The process has also proved useful in staff development, as a tool for developing understanding and shared approaches to organisational and management issues.

5.4 Standards

The NCVQ approach to developing competence has involved the setting of clear and public standards of performance. Adult learners could benefit from equally clear and public standards in non-vocational areas of education, but the model adopted by NCVQ has relied on a threshold standard of performance and is used only to distinguish competent from not yet competent. Such threshold standards may be inappropriate elsewhere and consideration will need to be given to the development of standards based on progression and on excellence, which are of central concern in many areas of adult and higher education.

5.5 Units and credit transfer

The value of a modular or unit-based system has been widely recognised by employers and educators, and competence is merely one means of defining what is contained within a unit. The potentially massive size of the NVQ system, and the implications for its expansion into the professions, heralded by the recent announcements

from the Institute of Chartered Accountants, suggest that a unit-based system will become a 'norm' and that credit transfer and alternative progression routes will be widely expected by learners and employers. It will be important that other systems are able to articulate with the vocational framework and that adults moving between systems derive the maximum benefit. The interlock between NVQ Units and those of CNAA CATS, Associate Student schemes, Open College Networks and the modular schemes of awarding bodies like BTEC need to be explored and defined more clearly.

5.6 Outcomes

One of the key features of the NVQ competence framework is that it is concerned with outcomes rather than with content or process. The development and definition of a broader range of outcomes, not necessarily related to work, could be a useful basis for unit-based systems outside vocational education. Outcomes are valuable to the learner, especially the adult learner, since they define clearly what will be learned and what is expected, clarifying options, opening access and facilitating the accreditation of learning acquired in many settings.

Outcomes are also valuable to the professional, whether teacher or manager, since they offer a means of measuring change in the individual which is not just related to the planned curriculum. This is particularly important in the adult education sector, where these outcomes are often highly valued but rarely precisely defined or formally assessed. The development of institutional performance indicators, and the increasing need to demonstrate value for money in education, makes it important that these outcomes should be clearly defined in order to ensure that they continue to be valued. A system for measuring outcomes could help to achieve this.

5.7 Implementation

Some of the most difficult issues raised by recent developments in competence are, in a broad sense, political. What is in progress is radical change affecting the whole world of employment, education

and training. While this change may have important benefits for the economy and for adult learners, there remains a key question of whether the institutional structure of NCVQ and LIBs, with the Training Agency, is strong enough to counter the formidable pressure to resist or redirect change.

Any radical shift of control of education and training away from teachers and institutions to the users (individuals and employers) is bound to create anxieties, and encounter resistance from a variety of quarters. Anxieties will include genuine concerns about the potential erosion of breadth and quality, as well as an understandable defence of professional and institutional interests. The two can, however, easily become confused, and it is important that there is a wide and well informed debate about these issues, otherwise the potential benefits to learners (adults and young people) will be lost. This stimulation of this wider and more informed debate is a task to which UDACE intends to contribute. This paper is a first step, and the Unit intends to follow it with further publications and project work on Learning Outcomes and on the relationship between these questions and the assessment of institutional performance in education. We would be interested to hear from agencies or individuals who would like to be kept in touch with, or collaborate in, this undertaking.

UDACE Publications on Competence and Assessment

This development paper is the first of a series from UDACE on issues relating to competence and learning outcomes.

The next publication will examine approaches to the definition of learning outcomes for adults, and will relate to planned project work in this field.

The Unit will also be publishing a paper on institutional performance indicators for the education of adults commenting on the role of competence, and measures of student achievement in such indicators.

Both papers will be available, price £2.00, from NIACE at the address shown below.

Student Potential in Britain

by **Sue Otter**

In 1986 the Department of Education and Science and the Manpower Services Commission (now Department of Employment Training Agency) commissioned UDACE to investigate the possible uses of some American structured interviewing techniques in British education and training. The techniques, which assess 'personal effectiveness', were designed for use in admissions selection and were tested in a broad range of institutions from Universities to Skillcentres. This is the report of the project.

UDACE, 1989; 56pp; 0 900559 84 5; £5.00

All publications are available from NIACE Publications Sales Department, 19B De Montfort Street, Leicester LE1 7GE.

UDACE

Understanding Competence

What is UDACE?

The Unit for the Development of Adult Continuing Education in England and Wales was created by the Secretary of State for Education and Science within the National Institute of Adult Continuing Education.

The Unit examines areas of possible development in the education of adults, recommends strategies for development and sponsors projects to encourage development.

The overall pattern of the Unit's activity is decided by a Steering Committee which usually works through small development groups of experienced practitioners to examine particular topics.

The Steering Committee gives priority in its work to topics where development

- will improve access to learning opportunities for adults
- will contribute to the creation of a more coherent service of education for adults
- is likely to improve the quality of learning opportunities available to adults

and, where initiatives by the Unit, including the publication of recommendations, guidelines or reports, or the sponsoring of investigations or projects are likely to lead to major improvements in the service.

Steering Committee Membership

Chairman Donald Grattan

Department of Education and Science
Margaret d'Armenia John Steel HMI

Welsh Office Education Department
Owen Jones HMI

Department of Employment Training Agency
Ros Seyd

Local Authority Associations
John Turnbull (ACC) Alan Culley (AMA) Gary Morgan (WJEC)

National Institute of Adult Continuing Education
Eddie Burch Hywel Francis Barbara Marsh
Lydia Merrill Haroon Saad Jenny Scribbins

Co-opted
Ray Cowell Lucia Jones Peter Shaw Jenny Shackleton

Ex-officio
Eileen Aird Jonathan Brown

Head of Unit Stephen McNair
Senior Development Officer Judy Alloway
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